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THE MANAGEMENT

OF THE

THIRD STAGE OF LABOR.

BY

SIMON BARUCH, M.D.,

NEW YORK.

Reprinted from THE AMERICAN JOURNAL OF OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN, Vol. XVIII., No. 4, 1885.

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To appear before the profession with a subject so commonplace and trite as that which I have chosen, would require an apology on my part. A subject which comes within the almost daily observation of many physicians should have reached a conclusive settlement long ago. But, unfortunately, the fact is patent that experienced and learned obstetricians are still at variance on the proper method of conducting the third stage of labor. Indeed, the latter has been deemed sufficiently momentous to elicit an elaborate clinical paper and discussion at the meeting of the International Medical Congress lately convened at Copenhagen.

We must therefore conclude that the subject is still *sub judice.*

I trust that my calling the attention of active practitioners to its consideration may be regarded as well-timed. If a full and free discussion from private practitioners as well as from maternity physicians can be elicited at this time, and if a more clear conception of a certain valuable method which I propose to defend can be created in the minds of some of my readers, the object of this essay will be achieved.

By common consent, the act of parturition has been divided into three principal stages: the first stage being that period during which the uterine cervix is dilated for the passage of the fetus; the second, in which the latter is propelled into and through the pelvic outlet and soft parts, and the third, whose design it is to remove the secundines and restore the uterus to a state of firm contraction, which guards it against hemorrhage from open sinuses and prepares it for the process of involution. In accordance with these hastily sketched objects of the three

stages of labor, does their normal procedure present advantages and do all deviations from the norm involve dangers whose influence upon the mother are immediate or secondary.

It is an acknowledged axiom in midwifery that deviations from the normal standard in the first stage of labor are not of so serious import as they are in the latter stages. Indeed, it would be difficult to establish a standard for this stage. It is not within the scope of this paper to discuss at length the conditions which render this stage abnormal. Reference is made to it only in order to bring into prominence the fact that, in proportion as labor advances, is the deviation from the normal processes enhanced as an element of danger to the mother.

Thus, with the inauguration of the propulsive stage, a more pronounced menace to her life is introduced. If from any cause inherent to mother or child this stage is greatly protracted or rendered impossible of termination, the accoucheur who, in the preceding stage, consented to be a comparatively idle spectator of nature's efforts, prepares to intercede energetically by resorting to those measures which may avert danger or neutralize it. With the advent of the third stage the parturient is ushered into a condition in which the peril from abnormal processes culminates. If the uterus be not completely emptied of its contents the dangers are not only immediate and sometimes appalling, but these being overcome, the puerperal period is beset with others of more serious prognostic significance and of more permanent influence upon the future health of the woman.

It has become quite evident to every thinking obstetrician that, while every stage of labor demands careful attention, watchful avoidance of abnormal conditions, and that skilful thwarting of hazardous complications, for which modern midwifery happily affords ample resources, the third and last stage of labor exacts the most scrupulous observance of details—details which seem insignificant in themselves, but whose proper or careless execution may make or mar a woman's health, may preserve or destroy a human life.

It is not surprising, therefore, that from the earliest days in the history of midwifery the removal of the after-birth, which is the chief object of the third stage of labor, has challenged the utmost consideration.

Nor is it surprising that able and conscientious men have differed upon so important a subject as the methods by which this removal may be most successfully achieved. It is well known that at the present time three methods of dealing with the placenta are in vogue, all of which boast of earnest defenders among obstetricians.

First—The ancient and honorable method of pure expectancy, which has come down to us from the fathers of midwifery, and which in all stages of labor has won many victories under the banner, upon which is emblazoned the legend, "Meddlesome midwifery is bad."

Second—The method of assisted removal, under the name of the Dublin method, and later under the designation of Credé's method.

Third—The eclectic method, which occupies a middle ground between the extremes of expectancy and energy of procedure.

It will be the aim of this paper to discuss the merits of these methods, with a view to demonstrate that in this branch of our art, as in all other departments, the golden mean is most fruitful of good results, and that a judicial consideration of the question will evolve a procedure which presents a maximum of advantage with a minimum of objectionable features.

First—The expectant method consists in permitting the uterus to expel the secundines without artificial aid, unless there be hemorrhage or other untoward accident demanding their removal. During the middle ages, a superstitious idea that the retention of the after-birth portended evil to the parturient, urged its immediate removal by violent measures. Ruysch in Holland, and a century later, Smellie, Denman, and Hunter in England, introduced the purely expectant treatment, and thus flew from one extreme to the other. Modifications of this method continued to be brought forward, until the Dublin school taught its evils and inaugurated a departure.

When the Dublin and Credé's method had come into general use, it was thought that the question of the propriety of trusting to nature in the third stage of labor had reached a final settlement.

But during the past five years the old method has again re-

ceived earnest advocacy. Some German obstetricians, in their enthusiastic search for truth, have exceeded their ancient predecessors in attempts to allow fair play to nature. Thus Kabierske (*Centralblatt für Gynäkol.*, 1881, v. 152) allows an hour to elapse ere the placenta is removed, even if it be lodged in the vagina. He claims that it is expelled spontaneously within three hours, and that by this natural method, retention of membranes, hemorrhages and fever rarely follow. "It is not unusual," says he, "to find the placenta retained four, five or six hours, and in one case even twelve hours elapsed before the expulsion." At Strasburg they treat the third stage of labor precisely as they do the second and first; the former is not hastened any more than the two latter; Kabierske would no more think of expressing the placenta, than he would force the expulsion of the child. He does not deny that by Credé's method the delivery of the placenta may be expedited without trouble, but he has the bugbear of putrid processes, hemorhages and long-continued lochia, before his eyes, and ascribes all these evils to the retention of membranes. Although Credé has shown how rare these evils are, Kabierske urges that "Runge and Dohrn have demonstrated how differently matters stand, *when the master's teachings are not strictly followed.* He avers that the membranes are not so completely loosened in the artificial expulsion of the placenta as in the spontaneous delivery. By the brisk removal of the placenta and the rapid traction of the latter upon the membranes, the more securely adherent membrane of the decidua is torn or frayed in the thinner layer." When the fetal surface of the afterbirth rolls upon itself and now rapid descent ensues, the separation of the neighboring thinner parts of the vera will occur less gently, and hence less completely, than when the uterine surfaces of the loosening placenta come together, and when its own weight, enhanced by the pressure of the blood which has been effused into the large fissure-like surface and into the inverted sac of membranes, completes the separation. In the latter case the process is in fact a gradual peeling off, in the former it is a pressing or tearing away from the underlying structures. This theory of the loosening of the placenta is in opposition to that of Schroeder and most other teachers, who have demonstrated that the membranes begin to be loosened

in the earlier stages of labor. Nor is it sustained by the observations of Schultze, Barbour, Spiegelberg, and Leopold, as will be shown later. The loss of blood, too, is acknowledged by Kabierske to be much greater than is regarded normal by Schultze. I will quote further from this remarkable paper in order to expose the fallacy of its reasoning. K. says that in one case he has "allowed the placenta to rest in the vagina and uterus twelve hours, and despite of evident odor of decomposition, not the slightest disturbance of the puerperal period occurred." To sustain this dangerous proceeding, he cites the record. "Old Dr. Busch," says he, "allowed the placenta to remain twelve hours in primiparæ, and twenty-four hours in multiparæ. Ritgen allowed it to remain five days without danger, until the bad odor became unbearable. Sturk, of Jena, waited until the third day; Crantz, Plenk and Aepli report cases in which the placenta was retained four to fifteen days without bad result."[1]

We cannot but marvel at the holy horror with which Kabierske regards the retention of a few shreds of torn membranes, when we note the equanimity with which he contemplates the retention of a foul placenta and the gusto with which he summons the ghosts of the ancients to bear witness to the innocuousness of allowing a putrid mass to lodge within the genital canal. He "strains at a gnat and swallows a camel."

Teuffel, who represents Ahlfeld's most recent views (*Deutsche Med. Wochenschrift*, No. 7, 1883), states that in Giessen they wait about an hour, or until they are certain of the extrusion of the placenta into the vagina. By means of serres-fines attached to the cord, Teuffel noted the advance made by the placenta in its course towards the vulva, and discovered by this exact method that it was usually extruded into the vagina in twenty-four minutes. The secundines are removed after the expiration of an hour by light pressure from above, or by

[1] The following case, related to me by Dr. T. A. Emmet, would demonstrate how much imposition may be practiced upon the vagina without blood-poisoning. The after-birth had been left one month, and when the friends insisted upon an examination, the doctor removed it and "a queer piece of flesh," all of which he sent to Dr. Emmet. This piece was formed of the bottom of Douglas' cul-de-sac, the cervix uteri, with all the anterior wall of the vagina, and urethra. After six months in bed, the parts healed.

traction on the cord and abdominal bearing down on the part of the parturient. The result was an average loss of 257 gms. of blood, which is in accord with Kabierske's experience. After-hemorrhages occurred in three per cent (3%), remnants of membranes readily loosened themselves, and the lochia lost their red color earlier. As is usual in these spontaneous extrusions, the placenta appeared at the vulva with few exceptions by its fetal surface and not with its edge, as Spiegelberg, Duncan, and Credé assert. It is held by some that the appearance of the fetal surface at the vulva is due to traction of the cord, but this is an error. The effused blood, which settles within the inverted membranes, forms the placenta into a cul-de-sac, whose dimensions are increased by the pressure of the blood and consequent rolling in of its edges. This mass plugs the uterine os, and in cases of inertia must surely encourage internal, unseen hemorrhage. Lumpe[1] reports a striking illustration of this danger.

Dohrn (*Deutsche Med. Wochenschrift*, 1880, 41, and 1883, 39) argues that even a retention of two hours does no harm, and claims that the later the expulsion of the secundines occurs, the more rare will be hemorrhage, retention of membranes, and fever. He furnishes more exact data to sustain his views, than does Kabierske, whose argument runs in the same line. To avoid needless reiteration it will suffice at this point to state that Dohrn occupies a conservative position among expectant obstetricians, that he has drawn up a comparison of the results in 1,000 cases in which an expectant management of the placenta was practised with another series of a similar number in which Credé's method was resorted to, and he pronounces decidedly in favor of the expectant plan. But he nevertheless candidly admits that Credé's method presents a vast improvement upon the plan which had been in vogue up to the time of its introduction. He says "if an old obstetrician is asked to furnish his practical experience, the disturbances incident to the after-birth period are referred to as playing a large rôle; retention of membranes and placenta, hour-glass contractions and hemorrhages are related.

"To these complications we are comparative strangers since Credé's time."

[1] "Physiologie der Nachgeburtsperiode," Arch. f. Gyn., 1884, p. 287.

Hildebrandt, of Kœnigsberg, does not allow the woman to be touched until two hours have elapsed after the birth of the child. If, during this interval of waiting, the woman experienced a bearing down sensation, she was urged to intensify it by voluntary efforts; the placenta was received and the membranes twisted out. "If in two hours the placenta did not appear, *it was expressed by Credé's method.*" It is within the experience of every obstetrician that the placenta may be *detained* without harm in the vagina, but it is unreasonable to permit its lodgment there for a moment, if it may be *removed* without harm. During my practice in the South, I was often called to difficult labor cases by the colored midwives who officiate to a great extent among the people of their own race and among the poorer class of white women also. Frequently have I seen a man dash up to my door, mounted upon a mule whose heaving flanks, distended nostrils and foam-covered body, indicated the urgency of the case. The message brought by the anxious husband or friend would be that "the after-birth has grown fast" and that the midwife desired my immediate attention to save the life of the patient. Arriving at the bedside, sometimes after a journey of six, eight, or ten miles, I have again and again found the parturient woman greatly alarmed, the pulse being excited, countenance anxious, eyes staring with fearful apprehension, while around her crowded sympathizing friends and neighbors, whose lugubrious faces indicated their alarm. On examination the cord was invariably found hanging from the vagina, *but firmly secured to the woman's thigh* by means of a strong tape or twine, in order to prevent the after-birth from slipping back into the innermost recesses of the woman's body, whence, according to negro superstition, it could never again be recovered without great danger. As many hours had usually elapsed before the patients were seen, the midwife having, like her Teutonic colaborers, given nature a fair chance to do her own work, the placenta was always found within the vagina, and was therefore removed with the greatest ease. I learned from these cases how quickly the condition of the parturient woman may be changed from one of deep gloom and apprehension to joyful cheer and contentment by prompt attention to the placenta.

In my whole experience I can recall but one case of placenta retained within the uterus.

It would be an act of supererogation to cite evidence in favor of the fact that the expectant method of managing the third stage of labor is a safe proceeding, *providing the accoucheur exercises a watchful supervision of the uterus* and does not depend upon the patient or nurse to report when hemorrhage is beginning or faintness is felt. All experienced obstetricians will concede, however, that many lives have been endangered and lost by trusting to kind nature to expel a placenta after the uterus has passed through so exhausting an ordeal as is involved in a prolonged labor. Obstetrical literature teems with striking illustrations.

The sagacious and philosophic Hunter, who adopted the expectant method because of the damage he had seen inflicted by the opposite extreme, violent placental delivery, recognized the danger of his course, and in his latter years abandoned it entirely.[1]

As will be shown later, we should be guided in this question, as in all others within the province of our life-saving art, by the environments of the case and the indications which these furnish.

Granting, however, that the danger is reduced to a minimum by the physician standing as sentinel over the uterus, it may well be asked, "What advantage is to be gained by wasting half an hour or several hours, as the modern zealots advocate?

Why should the accoucheur sit at the bedside with hand upon the uterine globe in uncomfortable expectancy, while the woman, who has just issued from the most fearful ordeal of her life, demands again and again in plaintive accents, "Doctor, am I not yet done after all that I have suffered? What is the matter, am I in danger? Will I suffer more pain? When will I get through?" and many other queries, indicating an anxious suspense, whose moral effect must be more or less detrimental.

Not many years have passed since the dictum that "meddlesome midwifery is bad" reigned with so much absolute authority that the obstetric forceps were applied with fear and

[1] Reeve, J. C., in Columbus Med. Jour., Aug., 1884.

trembling as a last resort. Expectancy received the benefit of a doubt, while the parturient was writhing in the agony of inefficient pains for hours and days.

To-day the forceps are regarded as an instrument valuable, not only for the saving of life, but also for the saving of comfort. They are perhaps resorted to with too great freedom, and their history illustrates how the pendulum swings from one extreme to the other. The conservative, well-informed obstetrician neither fears nor loves the forceps; he does not hesitate to terminate a tedious labor long before the pulse and other symptoms indicate exhaustion, because he realizes that from their skilful use under careful and antiseptic cleanliness, no harm can possibly come to mother or child, and *he* gives the forceps the benefit of the doubt if there be any. *So it should be to-day with reference to the method of dealing with the after-birth.* Are we to recede from our advanced position? Are we to return to those dark days in the history of midwifery, when all artificial interference was anathematized? This retrograde step would be taken if the third stage of labor is allowed to linger on for hours, endangering the lives of our patients and keeping them in anxious suspense, lying in their own gore in discomfort and distress, simply because we want to give Nature fair play. As will be referred to later, there are so many agencies influencing the possibilities of such a course that it cannot be safely adopted as a rule in midwifery practice. "This sort of moral handcuffing for an arbitrary time can only be applicable to persons who cannot be trusted to observe and interpret accurately the condition of the patient" (Barnes).

The *second, or Credé method*, was one of the results of the new era in midwifery, in which obstetricians emancipated themselves from the thraldom of authoritative dicta. To the Dublin school belongs the credit of the inauguration of the departure from the teachings of Ruysch, Denman, and Hunter. Dr. Barnes inveighs ("Obstetric Operations") with some indignation against the "singular want of information among our continental brethren as to the state of British midwifery," and claims that "the plan of causing the uterus to contract and expel the placenta by manual compression has within the last few years been introduced into Germany by Credé, without

a suspicion apparently that it has long been the familiar practice in this country."

While the Dublin school is entitled to great credit in this, as in many other valuable departures from established precedent in midwifery, I am disposed to agree with Playfair ("A Treatise on Midwifery," p. 262), who, not permitting patriotic ardor to cloud his scientific judgment, says: "The cardinal point to bear in mind is that the placenta should be expelled from the uterus by a *vis à tergo*, not drawn out by a *vis à fronte*." That uterine pressure has been recommended by many English writers is certain, and the Dublin school especially have dwelt on its importance as a preventive of post-partum hemorrhage; but the distinct enunciation of the doctrine that the placenta should be pressed, and not drawn out of the uterus, we owe to Credé and other German writers."

The Dublin method of following the uterus down during the birth of the child, was a great advance upon the practice which had previously obtained. Dr. Collins directed that "complete and perfect contractions of the uterus be insured by pursuing, with a hand upon the abdomen, the fundus uteri in its contractions." He does not recommend this procedure for the purpose of expressing the placenta, but with a view to "insure contraction," as a safeguard against hemorrhage. Only when speaking of *retained* placenta does he caution "not to drag it away forcibly, as inexperienced practitioners are frequently guilty of doing." The essential principle of Credé's method may be said to be foreshadowed by the practice of the Dublin school, but the strict obedience to indications remained to be emphasized by Credé, who aims to intensify the uterine contractions, *when they occur only*. A discussion of the claims of priority is not within the province of this paper, however. Indeed, the principle of placental expression offers but another illustration of the exclamation of the sage, "There is nothing new under the sun." For Engelmann tells us ("Labor Among Primitive People," 1882, p. 19): "It may be again remarked that primitive people, odd as it may seem, rarely pull on the cord, but in most instances use the *vis à tergo*; they stimulate the activity of the womb by friction of the fundus, and press out the contents. Massage, combined with expression of various kinds, never very forcible, is used in this stage of labor."

The method of Credé, by which the third stage of labor is not only shortened, but rendered more safe, had become the almost universal practice of modern obstetricans, until within the past few years mutterings of discontent arose here and there. These have culminated in an open revolt, in which some of Credé's own pupils, Ahlfeld and Dohrn, have actively participated.

This would seem singular were it not evident from the writings of these contestants that they have disregarded the teachings of their master. Indeed, instead of following the latter, Ahlfeld, Max Runge, Dohrn and Kabierske, who constitute the chief opposition, seem to have accepted the method taught in the popular work of Fritsch ("Klinik der geburtshülflichen Operationen"). In this text-book Credé's method is described as an "immediate expression of the placenta after the birth of the child." In fact the text-books rarely contain a correct description of this procedure, dismissing this important subject usually with a few words.

In conversation with practitioners I have discovered that Credé's method is rarely understood. Pressure from above, aided by squeezing, is regarded as the chief principle, some resorting to immediate and continuous downward pressure, others waiting a longer or shorter time, and some even supposing that this method is carried out when, after prolonged retention, violent pressure from above is brought to bear upon an inert uterus.

I desire here to emphasize the fact that *Credé's method is a prophylactic measure against retention of the placenta and hemorrhage*, and is not intended as a curative measure. This is an important distinction which has not been referred to in the numerous discussions of the subject. Credé has told us that if *after the lapse of half an hour the placenta has not been delivered, he regards the case as pathological*, and demanding manual intra-genital aid. Only when the early uterine contractions after the birth of the child are utilized, is this method really applied, and he estimates the average time after expulsion of the child to be about fifteen to twenty minutes in ordinary hands, a shorter time being possible in thoroughly expert hands.

When the placenta has been permitted to remain within the uterus twenty or thirty minutes, during which time the tonic

contractions of the uterus have gone on without being regarded by the obstetrician, who may have been otherwise engaged and now returns and begins to exercise frictions and pressure, which succeed in arousing the uterus and expelling the placenta, it cannot be claimed that Credé's method has been followed, and yet so able an obstetrician as Hildebrandt, of Kœnigsberg, tells us, that if the placenta does not appear after waiting two hours for it, he resorts to Credé's method of expression.

Again, if the placenta is already in the vagina, pressure from above may and does assist in expelling it into the vulva, whence it may be easily removed by the fingers. But this is not Credé's method at all. In such cases it will rarely happen that the placenta will be more or less completely extruded beyond the vulva, as is often the case when Credé's method is applied at the proper time and in the proper manner.

In view of these common errors and misapprehensions in which, as will be more fully shown later, teachers as well as practitioners, friends as well as foes, participate, I feel justified in quoting freely, in Credé's own words, the methodus operandi, which he teaches and practices:

"It is chiefly important to utilize exactly the proper point of time (Zeitpunkt) for pressure with the hand. The hand should be softly laid upon the uterine region; at first very gentle stroking movements over the largest possible surface of the uterus are made, until a contraction is felt under the hand; next grasp with the outspread fingers and hand, or when one hand is insufficient with both hands, the uterus, and at the moment when the contraction seems to have reached its greatest energy, press boldly upon the fundus and walls of the uterus, in the direction of the hollow of the sacrum. To press upon the uterus during the absence of a contraction in order to remove the after-birth, is entirely wrong and does not fulfil the object." (*Archiv für Gynäk.*, 1881, p. 264.)

"In innumerable cases I invariably succeeded, even if the contractions were ever so feeble, in exciting them by gentle and gradually somewhat increased friction of the fundus uteri, through the abdominal wall. And when the contractions reached their height of intensity, I so grasped the entire uterus that the fundus lay in the hand, and the five fingers adapted themselves to all sides of the body, and from these points ex-

ercised *gentle* pressure. I always felt the placenta slip out of the uterus under my fingers, and this occurred with so much power, that it at once presented itself in front of the vulva or at least lodged within it." ("Klinische Vorträge über Geburtshülfe," S. 599.)

These are Credé's earliest teachings, which he has not changed, except in so far as to state twenty years later, after a very large and ripe experience, that the average time which, in his last series of cases, elapsed between the birth of the child and expulsion of the placenta was four and one-half minutes (*Archiv für Gynäkol.*, 1881, 268).

In a very recent communication Credé reiterates at length the details of his method. It is important to follow him in these, his latest utterances on the subject, for it will be at once made evident how much stress he lays upon each and every precept. A comparison with the construction which many of his followers and opponents have placed upon his directions, will thus be facilitated, and conduce to the better comprehension of the entire subject.

"The chief principle is to leave the birth of the placenta as much as possible to nature, and to abstain from all interference within the genitalia.

"But in order to prevent possible dangers, especially more severe hemorrhages, which readily arise from a longer retention of the placenta, I advise that the uterus be guarded from the time of the birth of the child, without interruption, by applying the hand externally, and that the period of labor be shortened by strengthening the natural contraction of the uterus by means of easy and gentle strokings and frictions, which may arouse the too long-delayed contraction artificially.

"So soon as the hand resting upon the uterus perceives a strong contraction, accompanied by a simultaneous issue of blood from the vulva, and the uterus sensibly diminishes under the hand, the former should be grasped by the outstretched finger of one or both hands from all sides according to my directions.

"The hand occupying the centre of the true pelvis and grasping the uterus with its fundus thrown somewhat forward and upward, should press the latter gently downward into the

hollow of the sacrum, more towards the coccyx; hence in a woman lying quite horizontally upon her back, the direction of this pressure would be in a perpendicular line to the brim of the pelvis.

"In rarely favorable cases and under very practised hands, the placenta already slips out of the uterus into the vagina and even in front of the external genitals, during the first contraction. As a rule, this occurs only during the third or fourth contraction, and these occur about five or more minutes after the birth of the child. If the second or third contraction has not produced the expected effect, I await quietly further contractions and endeavor to cautiously increase each one in the same way.

"Less practised hands, but which must nevertheless have learned to work correctly, succeed mostly only during the fifth sixth, seventh, or even later pains; hence only after ten to fifteen minutes. Rarely is it necessary to wait longer than fifteen minutes, or even thirty minutes. We should never become impatient or violent in these manipulations. If *even after thirty minutes there has been no success, the case becomes pathological*, and we must wait hours even, according to circumstances, under constant observation of uterus, or intercede by manipulations within the uterine cavity. A perfectly passive procedure I regard, as heretofore, as objectionable. The most advantageous and at the same time perfectly harmless period for the expression is the third or fourth contraction, which occurs about five minutes after birth. If it is to be done by pupils or midwives, a later period is to be recommended —about fifteen minutes." (*Arch. f. Gyn.*, 1884, 304.)

As is usual in all discussions, in which fixed rules are involved, and in which striking differences of views are nevertheless observed and sustained by clinical evidence, the disputants in the discussion of Credé's method have not always followed his directions with that minute attention to details which is really essential. Thus we find Max Runge saying (*Arch. f. Gyn.*, 1883, 44): "Upon the more or less greater interval of time I would not lay too great weight, if the expression is not resorted to *immediately* after expulsion of the child, and *before the occurrence of after-pains*." Ahlfeld who, supported by the small clinical material at Giessen, has

written a most unjust polemic against the method of Credé, whose pupil and assistant he was many years, seems to have disregarded every precept, and acknowledges that when he "failed in expressing the placenta, it was usually due to not awaiting the hardening of the uterus." He claims that Credé commends expression *during the first beginning contraction* and argues that the squeezing process is to be deprecated, etc.

Dohrn (*Deutsche Med. Wochenschrift*, 1880, 547) says: "I do not, as Credé prescribes, undertake *expression immediately after expulsion of the child*, but wait until I believe the placenta to be in the vagina." This is another of Credé's pupils! Kabierske argues against a "brisk removal of the placenta and rapid traction of the same upon the membranes."

Hildebrandt, of Koenigsberg, quoted by Dohrn, delays two hours, and if the pacenta is not expelled, he resorts to Credé's method of expulsion.

Zweifel (*Arch. f. Gyn.*, 1884, 508) resorts to Credé's method only for the expression of the placenta from the vagina. He looks upon it as an after-help, when the placenta is not extruded within an hour.

Even among the supporters of Credé's method of expression it is misrepresented.

Fritsch teaches "*immediate* expression of the placenta after the birth of the child."

Stadfeldt (Am. Jour. Ob., Nov., 1884, p. 1,195), in his recent valuable contribution, to which reference will be made later, describes Credé's method as follows: *Vigorous circular frictions* of the fundus uteri were made immediately after birth of the child, and during a strong pain—generally the third—the placenta was expressed from the uterus and sometimes from vagina.

Garrigues, who ably advocates Credé's method ("Removal of the Afterbirth," Am. Jour. Obst., 1884, No. 5), and who briefly, yet more clearly than any other American writer, describes the steps, says: "An attempt should be made to *utilize the first afterpain* for expression."

Schultze, who is a warm defender of the first and most important stage of Credé's method, if it is executed according to the latter's directions, demurs against following the second stage, which he misapprehends, because, as he says, *it involves*

violent downward pressure (*Deutsche Med. Wochensch.*, 1883, 52).

How diametrically opposed the practice here quoted is to that which Credé inculcates is made evident by simple comparison. It is not surprising that Fehling, who is his devoted follower and pupil, indignantly says: "Every one who has acted as assistant or student in Credé's clinic, knows that he never taught that the placenta must be expressed immediately after the birth of the child, but as an average with the third or fourth afterpain, when it is usually loose within the uterus" (*Centralbl. f. Gynäk.*, 1880, 586).

Vigorous circular frictions, utilization of the first afterpain, immediate grasping of the uterus, and violent downward pressure are nowhere recommended by Credé. He lays distinct emphasis on soft and gentle strokings and friction. He deprecates all violent interference with the natural process, but insists upon following its indications patiently, and after the lapse of half an hour he regards the case as pathological. Abegg, who has used Credé's method in two thousand nine hundred and ninety-three cases, writes enthusiastically of it (*Arch. für Gyn.*, 1881, 378): "Credé's method must be strictly followed, never voluntarily, aside from a pain, but only during one; also not immediately after the birth of the child, but only after repeated contractions of the uterus."

Abegg here tells briefly "*how to do it.*" On the other hand, Ahlfeld illustrates graphically "*how not to do it*" in the following lines:

"To execute Credé's method immediately after birth is not so easy as is represented. True, we who in a short time could execute a large number of such manipulations, learned very quickly to force the uterus to contract and to find the proper time for expression. Young physicians and midwives often exert themselves in vain; they knead and knead without having properly grasped the uterus; especially do they in the beginning press at a time when the uterus is not yet hard, and then without success, but not without doing damage. With every clumsy pressure there comes a gush of blood, and every new loss of blood urges to greater haste, so that at last the doctor or the midwife works himself into an excitement which now becomes the cause of further mischief."

The apparently minor points of procedure, which are the essential factors in the Credé method, cannot be too vividly impressed upon the minds of obstetricians, especially upon those who have been deterred from adopting it by the recent brief allusions in the medical journals to the decadence of this method. I desire to point out the reason of the difference of opinion existing in Germany so clearly that each practitioner may form an independent judgment upon the subject at issue.

Despite the imperfect execution of some of the details of Credé's method, it has not been overthrown by its assailants, if we may judge from statistical evidence. What do we find the results in the practice of Credé's method when compared with the expectant method by the light of clinical experience?

Table of 2000 *Cases of Labor, by Dohrn.*[1]

Period after Birth of the Child.	Fever.		Hemorrhage.		Retained Membranes	
	Credé.	Expect.	Credé.	Expect.	Credé.	Expect.
1 to 5 minutes..	32%	17%	10%	17%	16%	3%
" 10 " ..	24	26	6	9	13	9
11 " 15 " ..	20	21	5	5	10	4
16 " 30 " ..	21	18	4	2	9	6
31 " over.....	14	15	3	3	14	2

It is evident from Dohrn's writings that in his earlier practice he did not follow implicitly the method of Credé, but resorted to immediate expression. His results are therefore better when he waited, as Credé directs, ten to fifteen minutes. Schultze, whom Dohrn quotes in support of certain of his views, says truly that Dohrn's procedure is "stormy and too early." If we, therefore, exclude the first cases, in which he expressed in from one to five minutes, and also set aside all those cases in which expression was practised after the expiration of thirty minutes (Credé's limit, beyond which he regards cases as no longer within the scope of his method and "pathological"), we find that the percentage of fever cases was equal in both methods; the percentage of hemorrhage was larger in the ex-

[1] Deutsche Med. Wochenschrift, ix., 39, 1883.

pectant, and the percentage of retained membranes greater in Credé's method. Considering, however, that the larger percentage of retained membranes did not increase the number of fever cases, and that in spite of them there was a preponderance of hemorrhage in the expectant method, that therefore the retention did no harm, it may in this comparative study be left out as an element pro or con. Hence, if these statistics of Dohrn are fairly and rigidly judged by Credé's standard of what really constitutes his method, it must be conceded that their showing is not, as Dohrn deduces, in favor of the expectant method, but on the contrary, they may be cited with good reason in support of Credé's method. When we turn now to the statistics furnished by Dr. Glitsch, the assistant of Credé in the Leipzig Maternity, we at once discover the vast advantage of this method, when executed under the eye of the master and by his well-trained assistants.

Table of 2000 *Cases, compiled by Dr. Glitsch.*

Slight Elev. of Temp.	Hemorrhage	Retained Membranes
42 cases = 2.1%	7 cases = .35%	96 cases = 4.8%

"There was no threat of infection and without measuring the temperature we would not have known that they were sick. None died. Hemorrhages are among the greatest rarities and are usually due to carelessness on the part of students; severe after-pains are exceptional, also displacements of the uterus." (*Archiv für Gynäk.*, 1881, 276).

In a later paper of the present year (*Ibid.*, XXIII., 304) Credé states that another series of one thousand cases confirms the above results, and that now after thirty years' experience he is confirmed in his favorable opinion of the method advocated by him.

Lumpe (*Arch. f. Gyn.*, 1884, 287) says: "It must be considered, if Credé's method would have had bad results, they must have been observed in an institution (Vienna) in which ten thousand births occur annually and in which this method has been used for twenty years."

We have, in a recent communication from Stadtfeld, of Copenhagen, to the International Med. Congress, another convincing argument in favor of Credé's method. These are the latest statistics on this subject, and will therefore be of interest at this point of the discussion.

Table of 1,780 *Cases of Placenta delivery by Expectant Method and of* 1,611 *Cases of Placenta delivery by Credé's Method.*

Hemorrhage during expulsion of Placenta.		Disease (Fever).		Hemorrhage (after Delivery).		Retained Membranes (detached).		Retainment and Retention of Placenta portions.		Mortality.	
Credé	Exp.	Credé	Exp.	Credé	Exp.	Credé	Exp.	Credé	Exp.	Credé	Exp.
2.3%	5.8%	18.3%	24%	0.8%	0.3%	2.3%	1.8%	0.6%	1.3%	0.6%	1.3%

Stadtfeld believes that, at the present day, retention of membranes has little influence in puerperal diseases and mortality, provided that strict antiseptic precautions are carried out during labor, and that the accoucheur *abstains from unnecessary meddling during the lying-in period.*[1] Large portions of the decidua even might be left without danger. It is fair to state that Stadtfeld regards Credé's method as unsafe in unskilled hands, because it requires intelligence and accuracy, and might be attended with danger. He therefore does not teach it to midwives, but prefers to allow them to use the Dublin method.[2]

Schultze and Credé, on the other hand, assert that the Dublin method is more dangerous in the hands of midwives because it is not competent to effect complete expulsion without some manual aid. Be this as it may, in our own country, the practice of midwifery is either in the hands of physicians or of untaught midwives. The latter are not within reach of instruction as a rule, but the former certainly possess the intelligence necessary to grasp the salient points of Credé's method, viz., the immediate GENTLE stimulation of the uterus to contract, the utilization of one of the first *decided* contrac-

[1] This is a point upon which too much stress cannot be laid, and, which I have endeavored to bring into prominence by recent papers "The Prevention of Puerperal Infection," etc., N. Y. Med. J., Mch. 22d, 1884, and "A Plea Against Prophylactic Injections after Normal Labor," Ibid., Jan. 5th, 1884.

[2] The "Dublin grip," as described by Stadtfeld, is really only a modification of Credé's method. "It should not be made by exerting pressure on the fundus uteri immediately after the birth of the child, because anteflexion of the uterus is thereby produced. Therefore great stress was laid on friction of the fundus uteri, as in the first tempo of Credé's grip: and after the placenta has descended into the vagina, it was removed with two fingers by conjoined slight traction of the funis."

tions only, regardless of the time of its occurrence, and the complete grasping of the entire uterus by the hand before expression is made, as described above.

Statistics of American practice have been meagre. Dr. Garrigues, in his valuable paper above referred to, furnishes a summary.

Summary of 400 *Cases of Placenta Delivery by Credé's Method, in N. Y. Maternity Hospital.*

Hemorrhage 0.5% Retention of Memb. 1.5%

I have refrained from citing authorities in support of the superiority of Credé's method over the recently agitated, expectant method of managing the third stage of labor unless their opinions are sustained by statistics. But I cannot close this part of the subject without referring to Ahlfeld's book, which has been so much quoted in this controversy. It is proper here to state that Ahlfeld creates much bluster without adequate statistics, his whole work being based on 275 or 300 cases only. Aside from this fact, his testimony is rendered nugatory by the polemic manner of his argument, which induces him to take great liberties with the text of those whom he criticises, suppressing whatever suits his purposes, and by the opinions, which not alone Credé, but also C. Breus, C. Ruge, Landau, Fischel, and others have published in defending themselves against the "misrepresentation, sophistry, and intolerance" characterizing Ahlfeld's "peculiar use of literature." Indeed, were Ahlfeld's arguments worthy of consideration, they could be easily overthrown, for his own statistics are against the expectant method. Out of 275 cases he had 13 hemorrhages, one fatal and three threatening life, while Breisky, out of 3,400 cases by Credé's method, had not a single fatal and only 3.5% of minor hemorrhages. Again Ahlfeld was compelled to remove the placenta once in 300 cases, while Breisky removed it once in 3,300. (Fischel *Prag. Med. Wochenschr.*, 1884, No. 6.)

Summing up the testimony which I have now adduced, I may claim that the superiority of Credé's method is clearly established by the only trustworthy evidence—clinical data on a large scale.

Third.—I come now to the third, *the eclectic method* of man-

aging the third stage. Its aim is to cull the best elements of Credé's method, and to obviate the only disadvantage which it possesses, the tearing and retention of membranes.

The separation of the placenta and membranes is partly the act of the second stage and partly of the third stage of labor. ust at what moment the placenta is separated from the uterine wall, it is impossible to determine. But it is a matter of great importance to obtain some definite idea of the fact whether or not the placenta is separated, before active measures looking to its expulsion are resorted to. The latter may be premature, and if so, will seriously embarrass the proper termination of the third stage.

The uterus possesses a twofold power of contraction, which I recognize as distinct in their character and office, viz.: a tonic and clonic contraction. The latter is the true expulsive contraction, and is usually accompanied by pain; the former is the slow, steady action of the uterine muscular fibre by which the organ is restored in the process of involution.

Tonic contraction has never come within my observation in the undeveloped normal uterus. But clonic or expulsive contraction is demonstrated when coagula escape from within the cavity. I have seen a small portion of cotton which had been accidentally pushed into the cavity of a uterus from whose cervix stitches were being removed, expelled with great force, after many fruitless efforts had been made to extract it by forceps. It may be safely assumed that the uterus never is aroused to expulsive contraction unless a foreign, partially or wholly detached body lies within its cavity. This observation is often made in cases of early abortion. The fetus being expelled, the uterus firmly retains the placenta so long as the latter is adherent to its walls, but just as soon as a partial separation ensues, be it either by natural or artificial means, expulsive contraction takes place and the secundines are extruded. Acting upon this principle, the treatment of retained placenta in early abortion becomes simple and effective. I do not resort to its immediate removal, for I hold that so long as there is not a considerable separation from the uterine wall, the danger from blood poisoning is not so serious as the danger from instrumental violence; whilst, on the other hand, so soon as detachment is complete, the uterus may usually be de-

pended on to expel the placenta. The method I have adopted during the past few years is to introduce a Sims speculum, cleanse the vagina and cervical canal as far as it can be reachedwith bichloride or carbolized solution, pack the cervical canal tightly with cotton tampons, and retain these in position by vaginal tampons. The result is that the blood which may be effused from the bleeding utero-placental vessels will aid in loosening the placenta. Within twenty-four hours the entire mass, placenta and tampons, will be expelled, or, after removal of the latter, the former will be readily grasped by forceps and brought away by the aid of the expulsive pains. If this is not the case, a curette is resorted to. It is probable, therefore, that the separation of the placenta is most frequently induced, first, by diminution of the uterine cavity during the birth of the child, and, secondly, by the tonic contractions of the uterus after the birth. If the hand be placed over the fundus uteri immediately after expulsion of the child in a perfectly normal labor, it will be felt as a more or less firm globe, which again and again hardens and relaxes. There is no outcry on the part of the woman, nor are the tonic contractions accompanied by expulsion of blood. After the uterus has thus repeatedly gathered itself together, there is heard an expression of pain, accompanied by bearing down and followed by a flow of blood. This is a clonic contraction, which is the true afterpain, and which is repeated until the secundines are expelled from the uterine cavity.

During the tonic contractions the sinuses are closed, and the membranes are separated in the ampullary layer of the decidua. A slight hemorrhage in the decidua occurs from the tearing of the maternal vessels. It is an error to suppose, as Ahlfeld, Kabierske, and Dohrn assume, that any considerable hemorrhage is a necessary factor in the act of separation. Very few spots are found on the peripheral part of the recently developed ovum which present adhering coagula (Schultze). Leopold said at the Int. Med. Congress, in the discussion of Stadtfeld's paper, that observations made in three Cesarean sections have convinced him that the manner in which the detachment of the placenta is ordinarily represented is not correct; he found no widely gaping vessels at the point of placental attachment, but only very smooth decidua in whose

layers loosening began. A retro-placental hemorrhage is not the rule. This view is sustained by Lumpe ("Physiologie der Nachgeburtsperiode," *Arch. f. Gyn.*, 1884, 287), who insists that large losses of blood are abnormal; the latter usually lies in layers, which can be noticed on the placenta after its birth. A space filled with blood is abnormal, and Alexander Simpson fortifies his own objections to the theory of a loosening of the placenta by free hemorrhage behind it, by quoting Barbour, who, from observation in the Porro operation, thinks that, from his description, Ahlfeld must have produced these hemorrhages.

From these considerations of the physiology of the third stage it follows that the chief and perhaps only factor in the loosening and expulsion of the placenta in normal labor is contraction—tonic contraction for the separation and clonic for the expulsion. There can surely be no harm in aiding nature by gentle friction during the former and pressure during the latter. The placenta is expelled from the uterus, not by the squeezing pressure, but by reflex action, which its propulsion into the os uteri induces. The grasping of the fundus during a vigorous after-pain intensifies the latter; the downward pressure of the uterus in the direction of the coccyx causes the lower portion of the placenta to impinge upon the inferior segment of the uterus, which, as Tyler Smith has shown, is at this moment in the "highest state of excito-motor irritability." The result of these manipulations is, therefore, *an intense reflex clonic contraction*, which, if carefully and guardedly induced, will propel the secundines into and beyond the vulva. The membranes are dragged down by the receding placenta, and this downward traction is in the same direction as in the spontaneous expulsion, the only difference being in the more rapid descent of the placenta in Credé's method, which endangers the integrity of the membranes. This is the only objectionable feature in Credé's method and may be obviated readily, as will appear later.

There is no doubt, if we may judge from recorded experiments, that the loss of blood incident to the expulsion of the after-birth is in the expectant method far in excess of that which accompanies Credé's method. Schultze estimates the loss in ordinary well-conducted labors at about 150 grms.; Teufel, whose observations seem to be made with care and

minute attention to details, tells us that the average loss of blood in his cases of expectant management was 257 grms. Ahlfeld says in his case it was 300 grms.; and Kabierski acknowledges that the hemorrhage incident to expulsion in the expectant method is larger than normal.

The physiology of the after-birth period, therefore, as studied by Schultze, Lumpe, Spiegelberg, Leopold, and Barbour, goes to demonstrate the fact that by Credé's method, implicitly followed, the expulsion of the placenta in normal labors is more closely imitated than by the expectant method. If we add to this conclusion the statistical evidence which I have endeavored to bring before you, from opponents as well as advocates of the Credé method, there would seem to remain not a reasonable doubt of the superiority of the latter as a rule.

The progress of the third stage of labor is subject to modifications which are impressed upon it by various influences, and which govern its management:

1. Social condition.
2. Progress of the preceding stage of labor.
3. Chloroform administration.
4. Tendency to hemorrhage.

During the past twenty years, it has been my privilege to attend women in all classes of society, from the plantation negress of the South, in her log cabin, to the city lady, in her luxuriously furnished apartments. And I have often been struck by the influence of the social condition on the stages of labor. True, the variations are not marked in those people in whom the social lines gradually merge, as, for instance, in that large number of women belonging to what is called the middle class. The most obvious difference is observed in the extremes.

The strong negress, who "hoes her task" until within a few moments of her accouchement, enters vigorously into the first stage; the os dilates rapidly, and often so rapidly that she seems to be ushered at once into the second stage. In the latter she lingers a proportionally longer time than her better-circumstanced city anti-type. While, therefore, the entire labor is shorter in the negress than in the refined city woman, the second stage does not bear the same chronological relation to the first in these different types of parturients. The average

city woman, especially in her first labor, writhes in anguish for many hours; in fact, she suffers for days those pains which have been termed preparatory. The cervix dilates slowly, occupying more time in this act than is required in the negress for the entire act of parturition. But so soon as the os is fully open, and the second stage is fully established, she passes rapidly through it, if there be no decidedly abnormal condition in the pelvis, uterus, or fetus. The pains are strong and effective, not so prolonged as in the more primitive woman, but more frequent and urgent. This difference is probably due to the predominance of the influence of the sympathetic system of nerves in the first stage of labor, and the more pronounced influence of reflex action in the second stage.

That a high state of civilization tends to exaggerate reflex irritability cannot be doubted. The nervous system becomes more sensitive to exciting causes and responds more readily to them. The adult frame of the delicately-nurtured female is thus somewhat approximated to that of a child. The psychical disturbances to which she is constantly subjected, the debilitating life of her girlhood (in early childhood far more attention is paid to a proper hygienic management) arising from hours spent in crowded schoolhouses, the substitution of calisthenic exercises or staid street promenades for active exercise in the pure air, the close application to study at puberty, and the gay round of pleasure, late retiring and rising incident to society life—all these conspire, as is but too well recognized, to enfeeble and enervate the modern woman of the higher classes.

She enters marital life, illy prepared for its duties and responsibilities. Spending the days of the honeymoon in the pursuit of pleasures, to which outraged nature sooner or later enters an indignant protest, she enters upon pregnancy with enfeebled powers. The early months are probably but a counterpart of the first, until increasing proportions warn her to retire from the gaieties of society and fashionable life. The hour of her delivery finds her nervous system in an exceedingly sensitive condition. Every pain is intensified; she is indeed incapacitated for the ordeal that lies before her. The cutting, grinding pains of the first stage are agonizing, and unfortunately they are often prolonged for many hours, without progress of

dilatation. The latter being at last accomplished, the second stage finds the parturient in an exalted state of reflex irritability. Consequently, the contractions are active and frequent, and by their frequency compensate for the feebleness of her voluntary muscular efforts. Thus an abnormal relation is established between the second and first stages in this class of parturients. This increase of expulsive contraction, which I have observed in the enervated patients whom I have been called to attend during the past four years of city work, has doubtless contributed materially to the production of ruptures of the perineum. Whether this be the true cause or a true factor or not, the fact remains that I have observed more ruptures of the perineum during the past four years than had fallen to my lot during the preceding fifteen years, despite the same preventive management of the latter part of the second stage.

Coming now to the third stage of labor, I have observed that the plantation negress, whose mode of life is quite natural or primitive, as a rule, expels the placenta into the vagina, or into or beyond the vulva, while in the refined town or city woman I have rarely found the placenta in the vagina, immediately after birth of the child, and never complete extrusion into or beyond the vulva. The reason doubtless lies in the fact that, in the former, uterine contractions in the expulsive stage, aided by the stronger voluntary efforts of which they are capable, are more continuous and effective, and when the child passes into the world, the uterus is not so exhausted, but is engaged in a supreme effort to terminate the entire process, while in the latter the shorter and more frequent teasing expulsive pains are less continuous in their action, and cease so soon as the child has been extruded. The uterus is now exhausted, a complete rest ensues in order that it may recuperate its powers ere the last effort is made. Tonic contraction continues to render the uterine globe firm; hemorrhage is therefore more rare in these parturients than in the former.

1. In the women of more primitive type, but more especially in those most nearly approximating it, as in the laboring women of the cities and towns, and in the middle classes, the resort to artificial aid in the third stage of labor becomes imperative early, if the placenta be not lodged within the vagina.

The uterus should be watched as Credé directs it done in his Klinik at Leipzig (where the women are mostly of the laboring and middle classes), and just so soon as a distinct vigorous contraction, whether artificially induced by gentle friction or not, ensues, expression should be practised. In the socially higher type of women, on the contrary, while the uterus needs to be watched, it should be allowed to rest the longest possible time, because the placenta is not so prone to be loose within its cavity, as in those parturients in whom the last expulsive pains have been more continuous and powerful. If, after several perceptible contractions, a vigorous one is felt by the overlying hand, and the patient cries out, while the right hand, which is held near the vulva for the purpose to be hereafter mentioned, feels a gush of warm blood, the left hand should grasp the uterus as directed by Credé and gently but firmly press it into the hollow of the sacrum, but a little more in the direction of the coccyx. If this moment be utilized, when Nature herself is about to make a strong effort, the placenta will be expelled into or beyond the vulva, certainly into the vagina. Sufficient stress cannot be laid upon the impropriety, nay danger, of violent squeezing or pressure during the intervals between the feeble contractions, for the purpose of intensifying them. Spasmodic and inefficient pains will surely be aroused. It is well to remember what Tyler Smith has told us ("Parturition," p. 175): "It is a peculiarity of the utero-vaginal canal that, at the termination of labor, all the surfaces are more instantly excitor, and the answering motor contraction becomes more rapid and more easily provoked. During severe labor, irritation of the os uteri, or of the vagina, will often increase the pains only in a moderate degree, but now the introduction of the hand into the vagina and irritation of the os uteri will excite constant and forcible contractions of the uterus." In the type of parturients now under consideration, injudicious friction or pressure is to be especially deprecated, because they display reflex irritability in a much more exalted degree than other classes, and this condition is often enhanced by the loss of sleep due to the prolonged first stage, and hyperesthesia of the abdominal and uterine walls. Perfect rest under surveillance is therefore the proper course here; haste and impatience to "express" should be avoided.

It will not be long ere the placenta will be loosened and the natural powers, especially if very gently encouraged, will give the signal for action.

2. When, aside from the influence of social condition or mode of life, the first stages of labor have not been normal, it behooves us to watch the third stage in order to meet any modification which may be engrafted upon it by the preceding stages. In parturients of the middle classes we may observe all those modifications of the first stages of labor which have been referred to as occurring in the extreme types. And even in the latter a considerable latitude must be granted to the element of constitutional diatheses. The influence of personal idiosyncrasies and peculiarities, as I have observed, for instance, on the one hand, in the negress of the city who, as the wife of a popular colored politician, in the palmy days of carpet-bag government in the South, had lived in luxury and ease; and on the other hand, in the city belle whose mother's good sense, combined with her own intelligent knowledge of what constitutes a healthful life, had enabled her to avoid the shoals and quicksands of ultra-fashionable life—such influence makes its impress upon the third stage of labor and may reverse its progress and its management.

Hence the progress of the first stages of labor should offer a guide to the conduct of the third. The chief point I desire to emphasize is the necessity of caution and patience in awaiting the true indications of nature, and not resorting to artificial means too early in those cases in which an irritable state of the nervous system has been induced by the prolongation of, or other characteristic of the preceding stages; and on the other hand, the imperative need of watchful care in interceding actively and immediately after the birth of the child, when uterine inertia forebodes hemorrhage.

3. The fact that chloroform has been administered modifies the management of the third stage of labor, inasmuch as uterine energy is somewhat reduced. In order to afford the parturient a safe passage through the last stage, it is essential that chloroform be withheld as soon as it is evident that the head is on the eve of emerging from the perineum. This rule is the result of a large experience in the anesthetic conduct of labor (for which, by the way, I have not, during the past

four years of city practice, had much opportunity, because chloroform is often objected to here).

In my zeal to afford the parturient a completely painless labor, I have in former years pressed the chloroform vigorously during the last expulsive pains. The result was that in many instances the shoulders were long delayed and the uterus did not resume contraction for delivery of the afterbirth, without considerable urging by friction and kneading. The tonic contractions, so necessary for the separation of the placenta, had been annulled by the continuation of narcosis, after withdrawal of chloroform. These cases have afforded me more anxiety and furnished more threats of hemorrhage than any others. Hence it is now my rule to begin the management of the third stage, before its inception, in chloroform cases, by diminishing the anesthetic as labor approaches termination, and withholding it entirely as stated above. It is necessary to be alert and watchful to act so soon as the child is born. The Dublin method of following the uterus down is here a valuable preliminary to Credé's expression.

4. When a tendency to hemorrhage exists, a fourth modifying factor enters into the management of the third stage of labor. Here, as in the last-mentioned cases, Credé's method alone cannot be relied upon. The uterus should be followed down as the child recedes from within its cavity, and it should be stimulated to tonic contraction until a strong pain occurs which may be utilized for expression of the placenta. To gently stroke the fundus and await a contraction would be criminal. The uterus must not be permitted out of our hands; it is an untrustworthy organ, whose delinquency may be forestalled by a more active method of procedure in order to prevent the most appalling and formidable of all complications. Credé's method cannot be strictly followed, because it is predicated upon a normally acting uterus; the introduction of the antiseptic finger or even hand may become necessary as an adjuvant to expression in threatening hemorrhage.

Having now pointed out, briefly it is true, the modifying factors of the third stage of labor and their treatment, I propose to consider the modification of Credé's method, which I have for several years practised with satisfaction, and which is

doubtless adopted by many other obstetricians, and is based upon the physiological considerations referred to above.

Credé's method consists of three stages: first, stimulation of the uterus by gentle stroking, with a view of inducing tonic contractions for the loosening of the placenta; second, grasping the uterus by the outspread fingers and hand, with a view to intensify an existing strong contraction; and third, the downward pressure for the purpose of aiding in shelling the placenta out of the uterus into the vulva.

The first two stages of this procedure leave nothing to be desired, if faithfully executed according to the detailed rules laid down by Credé. The third stage has sometimes seemed to me difficult to execute. The placenta is sometimes at once completely extruded into the vagina, so that gentle traction on the cord, or—what is better in the event of a portion still being held by the uterus—the hooking of two aseptic fingers into the placental mass, will be competent to remove it. Either or both of these maneuvres will induce reflex contractions, which aid the withdrawal materially. I cannot share the apprehensions of Credé which move him to refrain from all interference within the genitalia.

The third stage of Credé's method is really the most momentous to the parturient, because upon its proper conduct depends the removal of the membranes intact. In my earlier practice of Credé's method, when, stimulated by partisan zeal, the chief aim was to shell the placenta out upon the bed, it often fell to my lot to observe that the membranes were torn by the rapidly receding placenta dragging upon them. As a result of this contretemps was observed a somewhat prolonged continuance of the lochia; they retained a sanguineous character for a longer period and prevented the patient from indulging in active exercise. Sometimes the lochia would disappear and again return so soon as exercise was taken—a most unpleasant circumstance. I have, therefore, adopted the following plan to insure complete removal of the membranes. *The left hand is laid over the fundus, in readiness for expression at the proper moment; the right hand, previously rendered aseptic, is placed in front of the vulva, and, just at the moment of expression, two fingers of the latter hand are projected into the vulva, in order to impede the too rapid descent of the pla-*

centa. The latter is now caught by the hand and held within the vulva or partly within the vagina until the uterus recedes. It is now gently removed until the membranes are put upon a stretch. In this position it is held by the thumb and four fingers, while the index finger gently presses against the membranes, near their placental attachment, until the uterus relaxes its hold upon them and the whole mass drops. Twisting of the membranes is objectionable, inasmuch as it is a clumsy maneuvre which endangers the integrity of the membranes, and when successfully accomplished, it *encourages energetic traction.* Not rarely slight traction even induces reflex spasm which grasps the membranes tightly. Patience is here a virtue. A few minutes' delay will save tearing and consequent retention of the membranes. *The important point to be noted is that, while for the removal of the placenta we act during a pain, the opposite course is necessary in the removal of the membranes, for which a relaxation of the uterus offers the auspicious moment.* The simple reason lies in the fact that in the one case expression is sought, while in the other extraction is required.

When the placenta is once completely lodged within the vagina, I cannot conceive the necessity for arousing or encouraging uterine contractions for its expulsion. And yet how often is this done! Even some good obstetricians, as Hildebrandt and Zweifel, await the lodgment of the placenta in the vagina ere they resort to *Credé's method of expression.* The only aid that can now be derived from the latter seems to me the downward pressure of the uterus, which must be executed with more vigor than Credé would approve, in order to mechanically drive the placenta towards the vulva. It is safer to depend upon the voluntary downward pressure by the abdominal muscles and the diaphragm to give an impetus to the retained mass. It is just *the avoidance of mechanical and the utilization of the physiological aids* which marks the great advance in the management of the third stage.

It is no part of Credé's method to expel a placenta retained in the vagina, by violent downward pressure. His procedure aims to empty the uterus, and when this is accomplished, its "expressing" function is at an end. But it is nevertheless a

fact that, when the method is implicitly followed, the placenta is removed as far as the vulva or beyond it.

The uterus should now be watched, especially if the pulse be rapid, say over 100; for this is one of the safest indications of threatening hemorrhage.

In conclusion, I desire to maintain that the modification of the third stage of Credé's method advocated in this paper, although opposed to Credé's own teachings, has afforded me the most gratifying results. During the past eight years I have seen not one case of post-partum hemorrhage, and not a single case of retained placenta in my own practice.

It may be safely asserted that the obstetrician who faithfully executes this method, and who, as Stadtfeld says, and as I have, some time ago, labored to show, abstains from meddling with the inner genitalia of the lying-in woman, will have cause for gratulation in the freedom from dangerous or serious complications which will fall to his lot.

If the battle for Credé's method is to be fought over again, I would urge my American confrères to come to the rescue. It is unfortunate that our journals do not enter fully into the discussion of this subject. They make occasional allusions to the decadence of Credé's method in Germany, without presenting the question in its proper light. Hence practitioners who have not the opportunity to familiarize themselves with the German literature on this subject readily fall into the error of abandoning a method which presents the greatest advance in the management of the third stage of labor. I trust, therefore, that the effort to bring this subject clearly and judicially before the profession will not prove barren of good results.

34 E. 59TH STREET, Nov. 15th, 1884.